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The System of Air Representatives in the Ground Forces

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The regulatory provisions worked out in the prewar period on the organization and functioning of air representatives in the ground forces were utilized and further developed during the Great Patriotic War. It should be noted that for several reasons our command was not immediately able to implement them in the war's initial period. Specifically, this matter had not been adequately worked on in training exercises and therefore a considerable part of the air forces and ground forces command personnel did not have the appropriate knowledge or practical skills. Moreover, air representatives either were not supplied with their own means of communication or the available means were inadequate.

Frequently in the first month of the war there were no air representatives whatsoever at the tactical level of the ground forces in any front.* The commanders of aviation large units controlled the combat operations of their subordinate units from command posts located in the airfield areas and often without having personal contact or setting up communications with the combined-arms commanders. Therefore, when assigning a combat mission to a subunit (or unit), they themselves did not have detailed knowledge of the actual situation on the front and especially at the line of contact between the troops of the two sides. As a result of poorly organized coordination, aircraft attacked targets at a great distance from the forward edge, out of fear of hitting our own troops. For this reason the defending units and large units could not immediately exploit the results of strikes by bombers and ground-attack aircraft when counterattacking.

* TsAMO SSSR [Central Archives of the USSR Ministry of Defense], folio 206, list 2683, file 11, pages 6-10.

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The lack of air representatives at the command posts of combined-arms commanders caused delays of from three hours to a day or more in the transmission of their requests to an air-support command. That is why in a number of instances ground forces were left without air support or air cover at the most critical moment of a battle or engagement and why aircraft sometimes delivered strikes after they were no longer needed.*

In the latter half of July 1941, realizing the cause of the shortcomings in aviation operations for the support and cover of the ground forces, the Soviet command systematically began to put into practice, as provided for in regulations, the assignment of representatives from air divisions to rifle and mechanized large units.** To improve the organization of their activities, the air force staffs of fronts drew up special instructions that described in detail the procedures for assigning representatives from aviation large units to the ground forces and their assigned duties. For example, in the "Instructions on the Organization of Cooperation with Ground Forces and Among Branches of Aviation," which was drawn up by the air force staff of the Northwestern Front on 23 July 1941, it was pointed out that the commander of an air division, on receipt of an order for joint combat operations with a mechanized (or rifle) corps, after making up the coordination timing table, was to immediately dispatch an air representative to the corps. On arriving at the corps command post he would establish communications with the air commander (or staff) over the field communications system, inform him of the situation, and transmit the combined-arms commander's requests for air operations. When aircraft were approaching the area of combat operations he transmitted to corps headquarters the signal to be used by friendly ground forces to designate their forward edge and to implement the designation of targets.

Guidance posts equipped with radios were set up close to rifle division command posts to guide fighters to air targets. At each of them there was an air controller (usually from among the well-trained fliers). His tasks were to observe the air situation and notify our fighters of enemy aircraft in his visual range. In certain cases he designated targets for the aircraft of ground-attack and bomber aviation units which did yet have their own designated representatives.

* Ibid.

**They were called by various titles: observers, liaison delegates, liaison officers, responsible air representatives, etc. -- Author's note.

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In late July-early August 1941, air division commanders began the practice of visiting the command posts of combined-arms large units on the most important axes. Each of them took with him his chief of operations and his chief of communications along with a radio set.* This enabled him to quickly obtain his combat mission and thoroughly clarify it, evaluate the situation more completely, make a more rational decision, and issue more specific tasks to subordinate units and personally supervise their execution.

The presence of air representatives in the ground forces and the visits to their command posts of the commanders of air large units immediately yielded extremely good results. For example, in the air forces of the Western Front, when air division commanders were present at the command posts of rifle corps (or divisions), assigned aircraft sometimes delivered a strike against designated targets within 30 minutes after receiving a combat mission (or request) from the commander of a rifle corps (or division), which made it possible for ground forces to be more effective in using the results of air operations and in destroying the most threatening enemy targets.**

The institution of air representatives in the ground forces was radically restructured beginning in May 1942, simultaneously with the reorganization and further improvement in the organizational structure of Red Army air forces, the complete equipping of their units and large units with radios, the availability of more reliable means of target designation, and the accumulation of combat experience.

By order of the USSR People's Commissariat of Defense, starting in July 1942 aviation departments were set up in the headquarters of combined-arms armies in order to achieve more precise coordination with the air forces, and the "Regulation on the Aviation Department of an Army Field Headquarters" was put into effect, which defined it as an operational component of that headquarters and its chief as the army commander's aviation consultant.***

* Central Archives of the Ministry of Defense, folio 208, list 2683, file 11, pages 6-11.

** Ibid.

***Central Archives of the Ministry of Defense, folio, 346, list 52133, file 3, page 264.

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The main tasks of the aviation department were: drawing up plans for the combat operations of aviation assigned to support the army, and organizing communications between army headquarters and the aviation units and large units operationally subordinated to it and with the air army's headquarters; informing headquarters about the ground and air situation; organizing the marking of troops on behalf of air operations; training their personnel to recognize our own aircraft, and to locate and prepare airfields and landing sites; studying and collating the combat experience of ground forces against enemy aircraft, and drawing up instructions for them on rescuing crews that were forced to abandon their aircraft.

Experience has shown that the creation of aviation departments in the headquarters of combined-arms armies was a great step forward in improving cooperation between aviation and the ground forces. Permanent air force officers were always present in combined-arms armies, which enabled them to study the organization and tactics of the ground forces in depth, to utilize aviation more effectively, and to ensure fuller mutual understanding between combined-arms and aviation commands.

The deputy commander of an air army often served as the aviation representative at the headquarters of the army operating on the main axis in order to work out problems of cooperation when an operation was being prepared and to implement cooperation in the decisive stage of an operation's conduct.*

On 28 July 1942 air representatives from aviation large units started to be assigned to rifle corps and divisions in conformity with the requirements of a directive of the commander in chief of the Red Army's air forces for achieving close cooperation between aviation and ground forces at the tactical level.**

Normally the deputy commander of an aviation division served as the air representative. Located at the command post of a combined-arms large unit, he worked jointly with its staff to prepare the plan for the employment of assigned aircraft, transmitted to his own headquarters requests for the air support or air cover of ground forces and information on the situation in the area of combat operations, and directed the work of air controllers.

* RUDENKO, S. I. Kryl'ya podedy [Wings of Victory], Moscow, Voenizdat, 1976, pp. 96-106.

**Central Archives of the Ministry of Defense, folio 131, list 2086, file 37, pages 141-146.

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Practice showed that the assignment of representatives from air armies and air divisions to ground forces large units and formations had an overall positive effect on cooperation. Some shortcomings in this area were revealed, however, that were caused principally by the representatives' limited authority. Usually air representatives performed mainly informational and consultative functions. And while this was acceptable on the defense, when our troops shifted to rapid and highly mobile offensive operations changes had to be made in the established system for cooperation. The new conditions urgently required the commanders of aviation large units (or units) to be located at ground forces command posts.

For this purpose, starting in the fall of 1942 there were set up so-called "auxiliary command and control posts of aviation formations and large units": in an air army there was an air army auxiliary command and control post, and in an aviation large unit there was a forward command post. An air army auxiliary command and control post was deployed close to the command post of a combined-arms (or tank) army at a distance of 8-15 km from the front line. Normally located there were the commander of the air army or his deputy with an operations group and the officers of the aviation department of the combined-arms army.* He exercised command and control of the aircraft over the battlefield and directed the targeting, guidance, and retargeting of groups, subunits, and units.

At first the forward command posts of aviation large units were set up only for fighter aircraft, and beginning with the Battle of Kursk -- for ground-attack aircraft as well, and sometimes for bombers also. They were deployed in the area of the observation post (sometimes of the command post) of the combined-arms army on whose behalf the aviation large unit was operating. Located at the forward command post was an operations group headed by a division commander. Jointly with the ground forces staff, the group worked out the plan for cooperation, identification signals, aircraft target designation and guidance, and it specified the composition of aviation for executing the combat mission. During a battle it called for aircraft, guided aircraft and designated their targets, monitored the operations of aviation units over the battlefield, and notified air defense subunits of the approach of our aircraft to the front line, especially when returning from a combat mission. The creation of air army auxiliary command posts and the forward command posts of aviation large units

* Central Archives of the Ministry of Defense, folio 368, list 21854, file 1, pages 29-31; and folio 203, list 51354, file 5, page 4.

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considerably improved operational coordination between the air and ground forces.

In order to bring strikes by ground-attack aircraft and bombers as close as possible to attacking (or defending) troops, starting in 1943 to their command and control posts there were assigned air controllers from among well trained flight personnel or from the officers of divisional and regimental staffs. The air controller was part of the operations group of an aviation large unit's forward command post. Located at the observation post of the commander of a unit or large unit, he had with him a coded map, a radio signal table for implementing cooperation and target designation, and he used radio messages to indicate targets for aircraft and warn fliers when enemy aircraft appeared. This enabled ground-attack aircraft and bombers to hit designated targets accurately and close to the forward edge, and it precluded hitting our own troops.

By the middle of the second period of the Great Patriotic War, therefore, the system of air representatives in the ground forces began to operate more smoothly and efficiently while ensuring coordination in the combat actions of air and combined-arms formations and large units during operations. Right to the end of the war its structure remained virtually unchanged. At all of its levels there was a constant increase in the quantity of radio equipment, which made it possible to improve the quality of cooperation and the command and control of aviation over the battlefield.

It should be mentioned that some similar measures to improve cooperation between aviation and the ground forces were also carried out during World War II in the armed forces of other countries.

In the postwar period the experience of the organization and functioning of the system of air representatives in the ground forces was widely utilized by the armies of the imperialist powers in the local wars they unleashed. Under the influence of the development of combat weapons, and systems for the command and control of troops and weapons, and of the specific conditions for conducting combat operations, new elements and features have appeared in the system's structure and functions.

For example, in the Korean War (1950-1953) the Americans assigned air representatives to all ground forces formations and large units. In particular, a center for joint operations of air and ground forces was set up and manned by

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officers of the 5th Air Force and the 8th Army to ensure cooperation between these formations. The Air Force was represented in it by an air combat operations command and control group. In the zones of every 8th Army corps, tactical air control centers were deployed, and corresponding posts were set up in the zones of infantry and armored divisions and separate units.

Tactical air control centers were normally located in the area of the headquarters of army corps and maintained direct communications with them. They effected coordination between groups of aircraft and ground forces at the tactical command and control level, informed the crews operating in their zones about the ground and air situation, provided them with navigational assistance and, when necessary, retargeted aircraft in flight, reported data on the situation to higher authority, and transmitted to it requests for air support from various headquarters. The control posts guided aircraft to ground targets, pointed out to them the lines for safe bombing, informed the headquarters of large units and separate units of planned aircraft sorties, and relayed requests for air support to the tactical air control center.

A new feature as compared to World War II was the placement by the Americans of air controllers not only in troop battle formations but also aboard special aircraft, from which they monitored the situation on the ground and guided fighter-bombers to the most profitable targets.*

More substantial changes in the system of air representatives occurred in the local wars in Southeast Asia and the Near East. This was due mainly to the impact of the further development of command and control systems and the appearance of wholly new types of weapons and combat equipment.

In the Vietnam War (1964-1973) unleashed by the US the increased flight speed of support aircraft sharply reduced aircraft time on target. The land battle became much more dynamic and the shifting of the front line was greater. All this called for the organization of direct communications and personal contacts between the representatives of the air and ground forces right in the zone of fire distribution. In contrast to the Korean War, in Vietnam the air controllers in battalions were the lowest level coordinating tactical aircraft with the troops being supported. Their functions were the same as those of air

* Styuart, Dzh. Vozdushnaya moshch' -- reshayushchaya sila v Korei [J. STEWART. Airpower -- the Decisive Force in Korea], Moscow, Inostrannaya literatura, 1959, p. 124.

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controllers assigned at that period to infantry units and large units.

During the airmobile operations conducted by the Americans in Indochina there were a number of special aspects in the functioning of the institution of air representatives, including the creation of command and control centers for helicopter combat operations and airborne command posts in helicopters.* The command and control center worked out problems of cooperation, and organized and supported communications between supporting aviation and ground forces. Located in an airborne command post, along with the commander of the airmobile group, were the commander of the helicopter battalion with a representative from his staff, and also officers to coordinate fire support and communications with aviation.

This made it possible to coordinate in a short time strikes by artillery, helicopters, and tactical aviation to destroy important targets along the flight route and in the assault landing zones. Furthermore, the availability of special equipment in an airborne command post made it possible to guide fixed-wing aircraft and helicopters to ground targets.**

During air support in the India-Pakistan conflict (1971) there was organized a direct line for communications and delivering requests: "forward air controller -- airfield of ground-attack aircraft." Furthermore, in order to inform flight personnel of their combat missions in greater depth, there was a ground forces representative at the airfield, who received the requests and briefed the aircrews prior to a sortie.

During the local wars and armed conflicts in the Near East (1973 and 1982) with the appearance of air-to-surface guided weapons the role of the forward air controllers increased substantially. They had available improved means of guidance and target designation, which enabled them to effectively guide fixed-wing aircraft and helicopters operating at very low altitudes to ground targets.***

* Aeromobil'nyye operatsii armii SShA [Airmobile Operations of the US Army], Moscow, Voenizdat, 1977, pp. 75 and 76.

** Ibid.

***Voyenno-istoricheskiy zhurnal [Military History Journal], No. 12, 1983, pp. 39 and 40.

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The experience of organizing cooperation between aviation and ground forces in local wars is being widely utilized by the Americans to improve the tactical aircraft command and control system of the US Air Force in the European zone. According to information in the foreign press, this work is now being conducted along two lines: ensuring the command and control of US tactical aircraft and their cooperation with V Corps and VII Corps when providing them with close air support, and guiding American fighters to air targets to assist in air defense.

The system's manpower and materiel have been incorporated into the USAF 601st Tactical Control Wing. To perform the first mission there have been set up close air support squadrons and tactical air control squadrons, based on which there are deployed corresponding air support operational centers and tactical aircraft control teams at the combat operations command and control centers of the army corps and divisions to which they belong, while forward air controllers are assigned to brigades and battalions. These air control elements receive and analyze requests for close air support, assign flight resources by missions (or targets), organize and implement cooperation between tactical aviation and the ground forces units and large units being supported, and guide aircraft to ground targets. The command and control subunits are equipped with OV-10 Bronco special guidance and target-designation aircraft, CH-43 helicopters, radar, armored personnel carriers, and facilities for communications, data processing and imaging. Plans call for the use of OV-10 pilots detached from flight duty to act as forward air controllers.*

Thus, the experience from past wars has clearly demonstrated that the presence of air representatives in the ground forces is a necessary condition for achieving close cooperation between them and the air forces when performing joint missions. Proper functioning of this system substantially reduces aircraft reaction time to changes in the situation on the battlefield, puts their strikes closer to the troops, and makes it possible to operate not just in conformity with a plan worked out in advance but also to deliver strikes on call and to retarget groups of aircraft in flight to newly appearing or "activated" targets or to those that previously were not a serious threat.

* Zarubezhnoye voyennoye obozreniye [Foreign Military Review], No. 3, 1984, pp. 51-54.

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During World War II and local wars the system of air representatives in the ground forces was constantly improved under the impact of changes in the means of armed combat, the conditions of combat operations, the structure of the armed forces, and the accumulation of combat experience. The most important trends in its development have been:

- the creation of organic air control elements in ground forces formations;
- the organization of aviation and ground forces combined command and control centers and joint control posts (usually for the period operations are being conducted);
- the continuous lowering of the echelon of the ground forces to which air representative are assigned;
- the increased role of air representatives directly in the zone for the distribution of artillery fire, and of missile and aircraft strikes;
- the presence at ground forces command and control posts not just of staff officers but also of commanders of aviation units and large units, and sometimes of the senior commanders of formations or their deputies;
- the continuous expansion of the authority and duties as well as the capabilities of air representatives to control crews over the battlefield, coordinate and implement cooperation between aviation and ground forces, and reconnoiter the ground and air situation.

Setting up the system of air representatives in the ground forces and fine-tuning it to serve as a reliable and effective mechanism has followed a difficult and lengthy path.

In order to further improve this system, while still in peacetime we must have a sound theoretical base, specially trained air personnel, appropriate technical materiel, and adequate training for all personnel to ensure its functioning.

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Despite major changes in the means of armed combat and in the forms and methods of combat operations, the experience of setting up, developing, and operating the system of air representatives in the ground forces which was developed during previous, and especially during local, wars is still, under contemporary conditions, not just of theoretical but also of practical importance. Studying it will make it possible to understand and efficiently solve the problems of strictly coordinating the combat employment of the ground forces and aviation.

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